

**REMARKS**

After entry of the amendments herein, claims 1-18 shall be pending in the subject application. Claims 6-8, 11-12, and 15 have been withdrawn from further consideration. Claims 1 and 17 have been amended herein, and claim 18 has been newly added herein, in order to more particularly point out and distinctly claim subject matter. The Applicants respectfully submit that no new matter has been added. It is believed that this paper is fully responsive to the Office Action dated January 3, 2012.

The amendments are supported by the original disclosure of the subject application (see, for example, page 12 at lines 15-18, page 13 at lines 15-18, page 14 at lines 14-17, page 25 at lines 14-22, and Figure 1).

1. The Examiner has rejected claims 1-5, 9-10, 14, 16 and 17 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0148499 (Tanaka '499) in view of JP 05-245622 (Kawamata).

Applicants respectfully traverse this rejection, for the following reasons.

There are substantial, important differences between the art relied upon by the Examiner and the combinations of features as set forth in the claims.

The U.S. Patent and Trademark Office has the burden of proof to show that an applicant is not entitled to a patent if the claimed subject matter is anticipated by, or is obvious from, the art of record. A patent applicant is entitled to a patent unless the U.S. Patent and Trademark Office establishes otherwise.

The Examiner has relied on **Tanaka '499** for flux applying steps, disposing steps, and string steps of claims 1 and 17 (paragraphs [0071]-[0073]).

The Examiner has acknowledged that **Tanaka '499** is deficient regarding a cell heating step after a string step. In particular, the Examiner has stated “**Tanaka** is silent as to a cell heating step of heating the cells connected to the connection members” (OA, page 3).

In an attempt to remedy the acknowledged deficiencies of **Tanaka '499**, the Examiner has cited **Kawamata**.

**Tanaka '499** teaches that a solar cell is “immersed” into flux. Please see lines 1-3 of paragraph [0071].

To the contrary, as described in the subject application, “flux is applied to portions (shown dotted lines) of the surfaces of the plurality of cells 12 where tabs (connection members) 14 are to be soldered (second step)” (specification, page 12, lines 15-18). Please see Figure 1 of the subject application.

**Tanaka '499** fails to describe, teach, or suggest applying a flux to predetermined surfaces of the cells where the connection members are to be soldered.

In **Tanaka '499**, the rinsing and the cleaning by hot water are performed after the flux is applied (paragraph [0071]). After the cleaning, the interconnector 22 and the electrode 21 are soldered (paragraph [0073]). Namely in **Tanaka's** method of manufacturing solar cells, the cleaning of the surface of the cells has been already completed at the point of the interconnector 22 being connected. There is no teaching, motivation, or suggestion to clean the surface of the cells additionally after the interconnector 22 is connected.

There is no teaching, suggestion or motivation, for a person of ordinary skill to perform the heating step of **Kawamata** after the step written in the paragraph [0073] of **Tanaka '499**.

**Tanaka '499** and **Kawamata**, alone or in combination, fail to describe, teach, or suggest the combination of features recited in claim 1, as amended, including at least the following features: "a flux applying step of applying a flux to predetermined surfaces of the cells where the connection members are to be soldered; a disposing step of disposing the connection members over the adjacent cells to which the flux has been applied without performing a cleaning step of the surface of the cells; a string step of connecting the connection members to the cells by soldering without performing the cleaning step of the surface of the cells."

**Tanaka '499** and **Kawamata**, alone or in combination, fail to describe, teach, or suggest the combination of features recited in claim 17, as amended, including at least the following features: "a flux applying step of applying a flux to predetermined surfaces of the cells where the connection members are to be soldered; a disposing step of disposing the connection members over the adjacent cells to which the flux has been applied without performing a cleaning step of the surface of the cells; a string step of connecting the connection members to the cells by soldering without performing the cleaning step of the surface of the cells."

In view of the above, Applicants respectfully submit that this rejection of claims 1 and 17 should be withdrawn. It is submitted that the rejection of claims 2-5, 9, 10, 14, and 16 should be withdrawn by virtue of their dependency.

2. The Examiner has rejected claim 13 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0148499 (**Tanaka '499**) in view of JP 05-245622 (**Kawamata**) and JP 2003-168811 (**Tanaka '811**).

Applicants respectfully traverse this rejection, for the following reasons.

There are substantial, important differences between the art relied upon by the Examiner and the combinations of features as set forth in the claims.

The U.S. Patent and Trademark Office has the burden of proof to show that an applicant is not entitled to a patent if the claimed subject matter is anticipated by, or is obvious from, the art of record. A patent applicant is entitled to a patent unless the U.S. Patent and Trademark Office establishes otherwise.

The Examiner has not relied on **Tanaka '811** to overcome the above-described deficiencies of **Tanaka '499** and **Kawamata**. Please note that the teachings of **Tanaka '811** fail to overcome the above-described deficiencies of **Tanaka '499** and **Kawamata**.

**Tanaka '499**, **Kawamata**, and **Tanaka '811**, alone or in combination, fail to describe, teach, or suggest the combination of features recited in claim 1, as amended, including at least the following features: "a flux applying step of applying a flux to predetermined surfaces of the cells where the connection members are to be soldered; a disposing step of disposing the connection members over the adjacent cells to which the flux has been applied without performing a cleaning step of the surface of the cells; a string step of connecting the connection members to the cells by soldering without performing the cleaning step of the surface of the cells."

Claim 13 depends from claim 1. In view of the above, Applicants respectfully submit that this rejection of claim 13 should be withdrawn by virtue of its dependency.

3. The Examiner has rejected claims 1-5, 9, 10, and 14 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,466,302 (**Carey**) in view of JP 05-245622 (**Kawamata**).

Applicants respectfully traverse this rejection, for the following reasons.

There are substantial, important differences between the art relied upon by the Examiner and the combinations of features as set forth in the claims.

The U.S. Patent and Trademark Office has the burden of proof to show that an applicant is not entitled to a patent if the claimed subject matter is anticipated by, or is obvious from, the art of record. A patent applicant is entitled to a patent unless the U.S. Patent and Trademark Office establishes otherwise.

**Carey** discloses that interconnects can break due to high temperature required for soldering (column 1, lines 11-15; column 1, lines 31-32). Additionally, an object of the **Carey** disclosure is to eliminate solar cell breakage caused by heating.

The Examiner has not identified any portion of **Carey** showing “a cell heating step of heating the cells connected to the connection members” as recited in claim 1. In order to attempt to remedy such deficiencies in **Carey**, the Examiner has attempted to rely on **Kawamata**.

This rejection of claim 1 is improper and should be withdrawn, because:

\* **Carey** would cease to operate as intended if an extra heating step of **Kawamata** were to be added to the **Carey** procedure (**Carey**'s object is to reduce a need to heat and thus reduce the frequency of breakage due to heating); and

\* it would not be reasonable for **Carey** to be modified and combined with **Kawamata** in the manner suggested by the Examiner, in view of the above.

**Carey** and **Kawamata**, alone or in combination, fail to describe, teach, or suggest the combination of features recited in claim 1, as amended, including at least the following features: "A method ... , comprising the following steps in the order named: **a flux applying step** of applying a flux to predetermined surfaces of the cells where the connection members are to be soldered; **a disposing step** of disposing the connection members over the adjacent cells to which the flux has been applied without performing a cleaning step of the surface of the cells; **a string step** of connecting the connection members to the cells by soldering without performing the cleaning step of the surface of the cells; **and a cell heating step** of heating the cells connected to the connection members" (emphasis added).

Accordingly, in view of the above remarks and amendments, Applicants respectfully submit that this rejection of claim 1 is improper and should be withdrawn. It is submitted that this rejection of claims 2-5, 9, 10, and 14 should be withdrawn by virtue of their dependency.

4. The Examiner has rejected claim 13 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,466,302 (**Carey**) in view of JP 05-245622 (**Kawamata**), U.S. Patent No. 5,074,920 (**Gonsiorawski**), and JP2003-168811 (**Tanaka '811**).

Applicants respectfully traverse this rejection, for the following reasons.

There are substantial, important differences between the art relied upon by the Examiner and the combinations of features as set forth in the claims.

The U.S. Patent and Trademark Office has the burden of proof to show that an applicant is not entitled to a patent if the claimed subject matter is anticipated by, or is obvious from, the art of record. A patent applicant is entitled to a patent unless the U.S. Patent and Trademark Office establishes otherwise.

**Gonsiorawski** and **Tanaka '811** fail to remedy the above-described deficiencies of **Carey** and **Kawamata** regarding base claim 1.

**Carey**, **Kawamata**, **Gonsiorawski**, and **Tanaka '811**, alone or in combination, fail to describe, teach, or suggest the combination of features recited in claim 1, as amended, including at least the following features: "A method ... , comprising the following steps in the order named: **a flux applying step** of applying a flux to predetermined surfaces of the cells where the connection members are to be soldered; **a disposing step** of disposing the connection members



over the adjacent cells to which the flux has been applied without performing a cleaning step of the surface of the cells; **a string step** of connecting the connection members to the cells by soldering without performing the cleaning step of the surface of the cells; **and a cell heating step** of heating the cells connected to the connection members” (emphasis added).

Claim 13 depends from claim 1. Accordingly, in view of the above remarks and amendments, Applicants respectfully submit that this rejection of claim 13 should be withdrawn by virtue of its dependency.

5. Claim 18

Claim 18 sets forth, inter alia, “a glass having a light transmitting property is laminated on the surfaces of the cells after the cell heating step, wherein in the disposing step, the connection member is disposed on the top of one cell and the undersurface of the adjacent cell, and in the string step, the top of one cell is connected to the undersurface of the adjacent cell by the connection member.”

Based on the disclosures of **Tanaka ‘499** and **Kawamata**, it is not possible to remove the residues by heating both surfaces at one time after connecting the connection member to the top and undersurface of the cells, and then laminate the glass substrate.

U.S. Patent Application Serial No.: **10/594,389**

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Reply to OA dated January 3, 2012

The combination of features recited in claim 18 is not described, taught, or suggest by **Tanaka '499, Kawamata, Tanaka '811, Carey, and Gonsiorawski**, alone or in combination.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the Applicants' undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, the Applicants respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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Enclosure: Request for Continued Examination